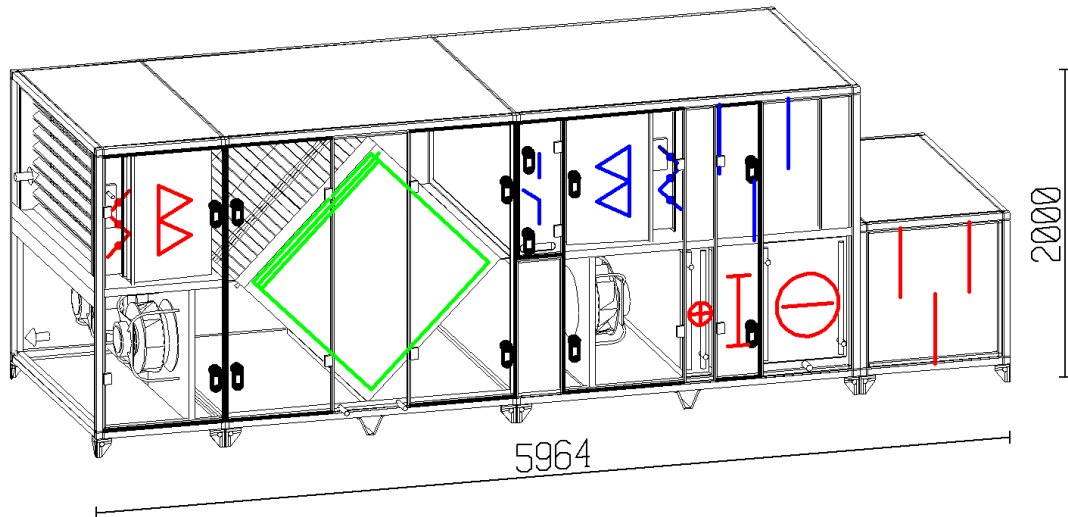


Description: Geniox 18 - Indoor Unit

Unit width / Weight: 1882 mm / 2234 kg

Delivery: 4 sections; Feet are supplied mounted on the unit casing.



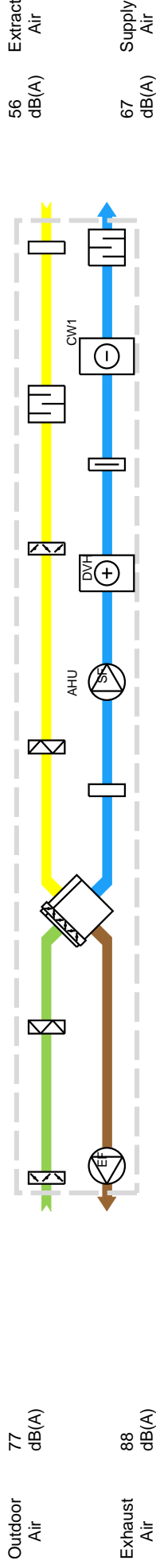
Unit			
Unit color Insulation Hygienic	ZincMagnesium 60 mm mineral wool / Density 60 kg/m3 Standard		
Control system	Access control system		
Power supply Unit	L1 + L2 + L3 + N + PE (3x400V) 50 Hz / 29.8 A		
Sound break out Supply air	67 dB(A) 67 dB(A)		
Supply Air/fan data	Air density 1.205 kg/m ³		
Airflow Face velocity Ext. Δp	15500 m ³ /h 2.89 m/s 400 Pa		
Supply air, Winter Summer	22.0°C / RH 11% 16.0°C / RH 92%		
Filter Stages	F7 - ePM1 60%		
Fan Voltage Rated current RPM	(2 x 5.00) 10.00 kW 3x400 V (2 x 8.00) 16.00 A 2433 RPM		
Heating, water Fluid	37.1 kW ; 14.8/22.0°C Fluid 70/50°C ; 7.1 kPa ; 0.46 l/s ; Ø 1 1/4" / 1 1/4"		
Cooling, water Fluid	95.9 kW ; 28.2/16.0°C Fluid 7/12°C ; 29.3 kPa ; 4.60 l/s ; Ø 2 1/2" / 2 1/2"		
Extract Air/fan data	Air density 1.205 kg/m ³		
Airflow Face velocity Ext. Δp	13800 m ³ /h 2.58 m/s 400 Pa		
Filter Stages	M5 - ePM10 60%		
Fan Voltage Rated current RPM	(2 x 3.40) 6.80 kW 3x400 V (2 x 5.40) 10.80 A 2040 RPM		
Energy	Dimensioning	Average	Fans [8760 hours]
Heat Recovery EN308 (Dry)	73.7 % 72.3 %	73.7 % 72.3 %	
SFPv *)	2.89 kW/(m ³ /s)	2.89 kW/(m ³ /s)	109091 kWh
SFPe *)	3.03 kW/(m ³ /s)	3.03 kW/(m ³ /s)	108014 kWh
Ecodesign approved (2018)	No		
Air handling unit location	Tbilisi, Georgia (t _{dry - bulb} 35.2 °C, t _{dew - point} 15.8 °C, t _{dry - bulbW} -4.1 °C)		
*) Values include speed control; SFPv = clean - and SFPe = dimensional-filter pressure drop			

Winter

Temperature after [°C]	-8.0	-8.0	2.4	22.0	22.0	22.0	22.0	22.0	22.0	22.0
Humidity after [%]	90	90	97	40	40	40	40	40	40	40
Pressure drop [pa]	100	5	296	105	4	33	6	300		
Pressure after function [pa]	-100	-105	-749	-448	-343	-339	-306	-300		
				M5 - ePM10 60% Filter						

Summer

Temperature after [°C]	35.0	35.0	32.5	24.0	24.0	24.0	24.0	24.0	24.0	24.0
Humidity after [%]	36	36	30	50	50	50	50	50	50	50



Winter

Temperature after [°C]	2.9	2.9	14.1	14.1	14.8	22.0	22.0	22.0	22.0	22.0
Humidity after [%]	94	94	18	18	17	11	11	11	11	11
Pressure drop [pa]	100	30	372	7	38	25	7	266	42	300
Pressure after function [pa]	-	100	-621	-628	641	616	608	342	300	-
			Efficiency 71.2% (Total Pressure)		Efficiency 70.6% (Total Pressure)		37.15 kW			
			73.7/72.3% Wet/dry							

Summer

Temperature after [°C]	33.0	33.0	27.4	28.2	28.2	28.2	28.2	16.0	16.0	16.0
Humidity after [%]	29	29	56	53	53	53	53	92	92	92
			77.3% wet					95.93 kW		

Ecodesign

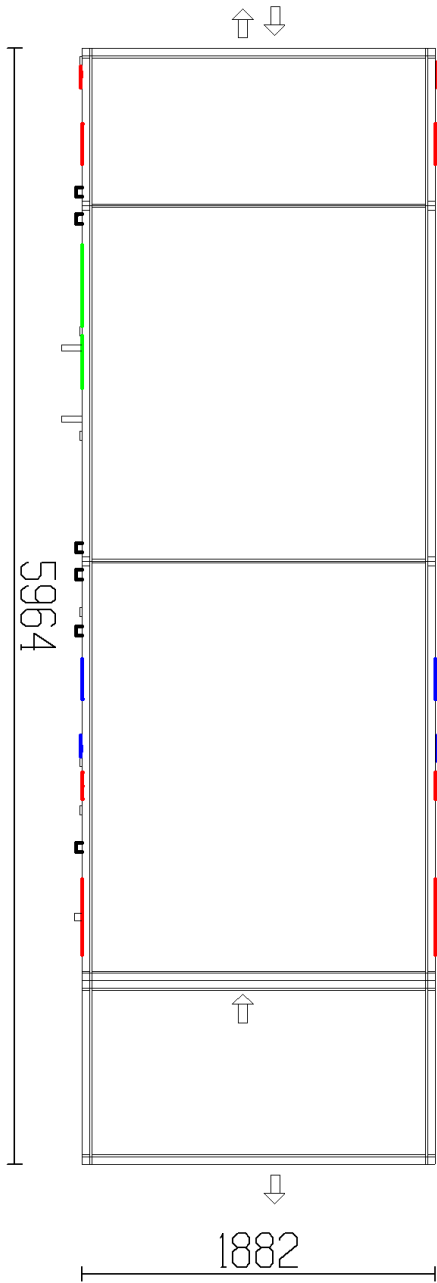
	2018	Value	Limit
Unit type (Non-residential - Bidirectional)	Approved		
Fan with multispeed or Var.Speed Drive	Approved		
Heat recovery	Approved		
Thermal efficiency of Heat Recov. System	Failed	72	73
Pressure gauge	Approved		
SFP internal in W/(m³/s)	Failed	1183	800
Total check	Failed		

		Supply	Extract	
Manufacturer	Systemair			
Model	Geniox 18			
Typology	NRVU;BVU			
Drive Type		EC Bluefin	EC Bluefin	VSD Ok
Type of Heat Recovery System (HRS)	Plate heat exchanger			
Thermal efficiency of HRS (dry condition)	72			%
Non Residential unit - flow rate		4.31	3.83	m³/s
Effective electric power input incl. clean filters and variable drive		6.15	4.34	kW
SFP internal in W/(m³/s) 2018	1183	676	507	W/(m³/s)
Face velocity		2.89	2.58	m/s
Nominal external pressure		400.00	400.00	Pa
Internal pressure drop of ventilation components		466.02	351.52	Pa
Overall static pressure drop with clean filter		866.02	751.52	Pa
Total fan efficiency by static pressure incl. motor and speed control		68.94	69.30	%
Maximum external leakage rate @ ± 400 Pa	Leakage is less than 18.4 l/s -> Leakage rate is less than 0.4 %			
Maximum internal leakage rate (EATR, ?p = 250 Pa)	Leakage rate is less than 3%.			
Energy class for filters		B	B	
Visual filter warning description	Control display			
Internet address with information about disassembly	techdoc.systemair.dk			

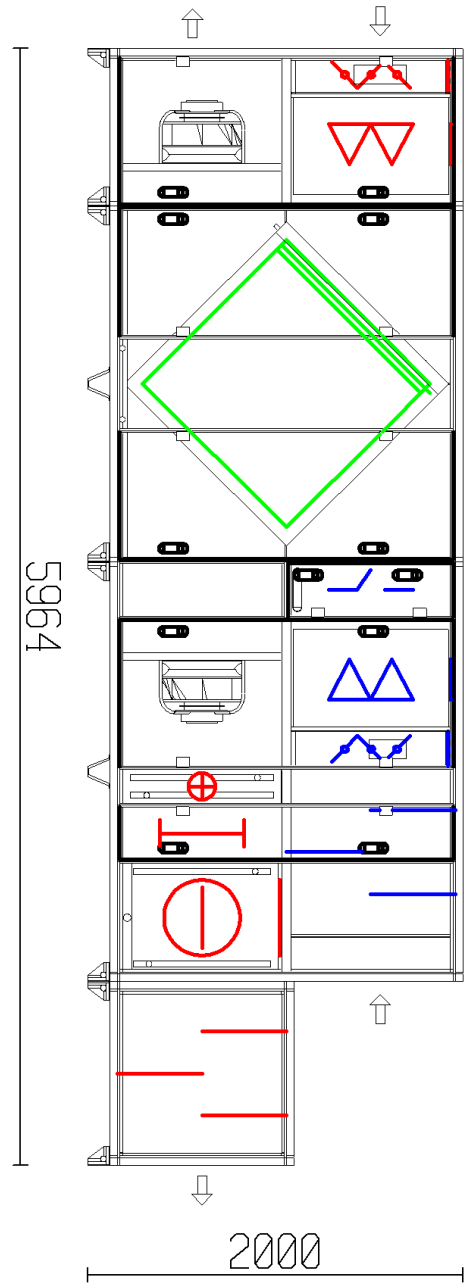
Sound power level	Supply air	Outdoor air	Exhaust air	Extract air	Sound break out
Total	67 dB(A)	77 dB(A)	88 dB(A)	56 dB(A)	67 dB(A)

Ecodesign is calculated for a reference configuration with ePM1 60% (F7) filter in supply and ePM10 60% (M5) filter in extract.

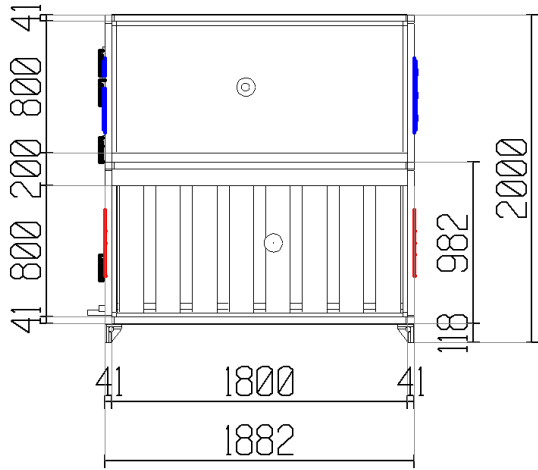
Plan view



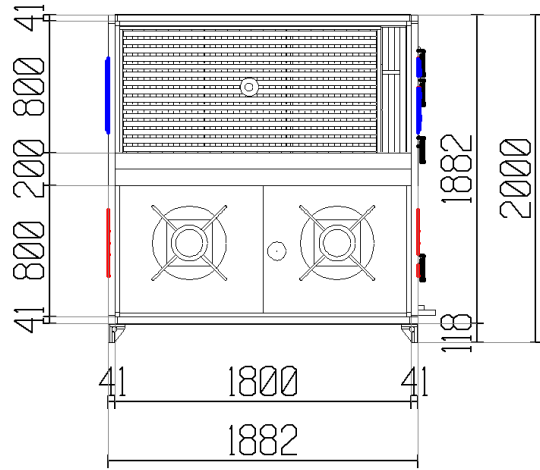
Access side



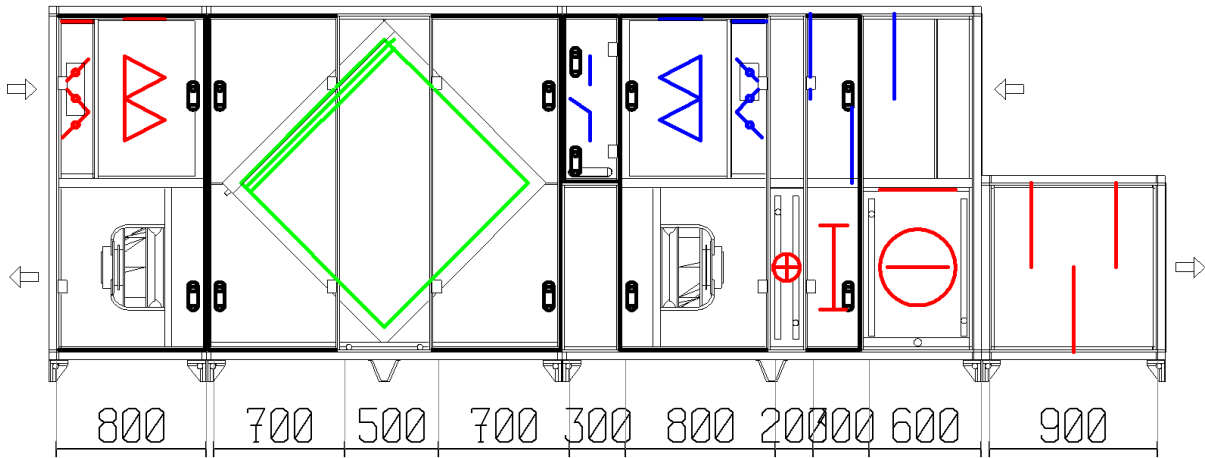
Right end



Left end



Doors and panels dimensions



Technical specification

Unit

Frequency band [Hz]	63	125	250	500	1K	2K	4K	8K	Total
Sound power level	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB(A)]
Supply air	75	73	75	61	44	42	46	42	67
Outdoor air	73	77	81	77	66	62	55	50	77
Exhaust air	75	85	84	83	82	82	79	73	88
Extract air	62	68	60	48	32	29	28	27	56
Sound break out	72	74	67	62	61	60	55	38	67

Casing		
Panels	Steel sheets coated with ZM310, corrosion class C5	
Frame profiles	Steel profiles coated with z225 painted, corrosion class C4	
Mullion profiles	Steel profiles coated with ZM310, corrosion class C5	
Corners	PA6 fiber reinforced	
Insulation	60 mm mineral wool / Density 60 kg/m3	
Corrosion protection	Class C4 according to EN ISO 12944-2:2018	
Operating pressure	0 - 2000 Pa (Geniox10 - Geniox31)	
Operating temperatures	-40/+40 °C (Standard) -40/+60 °C (Special design)	
Classifications	EN 1886, 2. edition 2008	
Mechanical Strength	Class D1(M)*	
Casing air leakage	-400 Pa: Class L1(M)* +700 Pa: Class L1(M)*	
Filter by-pass leakage	-400 Pa: Class G1-F9 +400 Pa: Class G1-F9	
Thermal transmittance	Class T2(M)*	
Thermal bridging factor	Class TB2(M)*	
Acoustic insulation of casing	Octave band Hz	Insulation dB
	63	10
	125	17
	250	24
	500	27
	1000	28
	2000	28
	4000	32
	8000	40

* (M) = Classification according to EN1886 Modelbox test

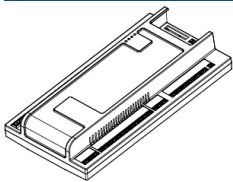
Access control system

The air handling unit is built with a complete and fully integrated control system - based on the Access control unit mounted in the control cabinet and the Access NaviPad control panel (optional) with a graphical user interface. The air handling unit can either run stand-alone or managed from a Building Management System (BMS).

Access 5 have integrated Bluetooth (BLE) and WiFi communication enabling a secure and robust plug-and-play solution. With the user-friendly Access Connect app, available for Android and IOS, it's easy to connect, configure and control the air handling unit using a smartphone or tablet.

Order-specific functions are configured, and all settings are stored as factory settings in the control unit from factory. Component labels inside the air handling unit do not have project specific reference naming

Access control unit CU40-C2 WiFi



Physical Inputs/Outputs	40 (10 AI, 12 DI, 4 UI, 6 AO, 8 DO)	
Degree of protection	IP20	
Operation temperatures	0...50	°C
Storage temperature	-20...+70	°C
Input voltage	24	V DC
External communication	Modbus RS485, Modbus TCP/IP or BACnet IP, Systemair connect (Cloud service)	

Access Application Tool

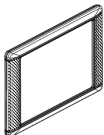
PC based tool for managing the Access application. The tool provides a complete range of functions for software upgrade, backup and restore, configuration, automated commissioning record and trend logg. Access Application Tool is available for download at www.systemair.com

Access Connect (App)

Access Connect by Systemair is a mobile app for control of air handling units using Access 5 control system. Download the app on Google Play for Android or Apple App Store for iOS.



Access NaviPad



Panel type	IPS, capacitive	
Resolution	1024x600 (16:9)	
Colors	16.7M	
Screen size (diagonal)	7"	
Degree of protection	IP54, shock resistance 1m drop	
Operation temperatures	0...50	°C
Storage temperature	-20...+70	°C
Input voltage (20 to 48VDC)	24	V DC
Cable length (max total length 100m)	3	m

Control cabinet

Voltage	3x400	VAC
Hz	50	Hz
Switched power supply	24	V DC
Cable entry position	Cable entry in bottom	
Cable gland for main supply cable	M32	
Fuse for supply air fan (in main cabinet)	20	A
Fuse for extract air fan (in main cabinet)	16	A
Rated fuse PSCC max (in main cabinet)	6	kA
Max. consumed current	29.8	A
Max. consumed current in neutral wire	3.0	A

The installer must ensure that protection of the mains power supply relating to frequency converters is according to local statutory requirements. By one or more 400 VAC motors, Residual Current Circuit Breaker type B must be installed. By one or more 400 VAC motors, HPFI type B must be installed.

The electrical installation (wiring, mounting of components, connection plugs, etc.) for the unit is done as an machine installation according to 60204-1

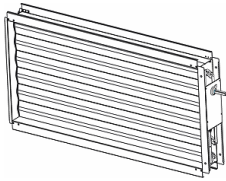
Power supply connections

Object	Pre fuse	I max	* Main switch	Rated voltage
Control cabinet	gG/C 32 A	30 A	No	3x400V + N + PE

*) Main switch; Yes= loose delivered from Systemair, No= Not supplied from systemair, Mounted = Factory installed and connected

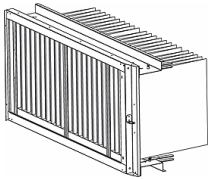
The supply unit consist of

Damper



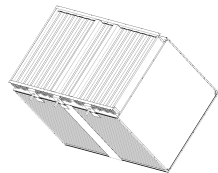
Pressure drop	5	Pa
Damper blades	Standard	
Number of dampers	1	pcs
Number of shafts	1	
Damper actuator - Spring return	1	pcs
Damper actuator - Voltages	24	V
Damper actuator - Torque	10	Nm

Filter



Dimensioning pressure drop	144	Pa
Initial pressure drop/Final pressure drop	94/194	Pa
Velocity, face area	3.28	m/s
Velocity, filter area	0.19	m/s
Filter class	F7 - ePM1 60%	
Filter size	2x[490x392x25] + 4x[592x392x25]	
Filter length	520	mm
Filter description	Camfil Hi-Flo II XLT	

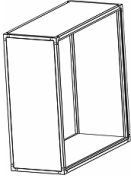
Plate heat exchanger



With face and by-pass damper			
	Supply	Extract	
Air flow	15500	13800	m³/h
Pressure drop (dry conditions)	372	296	Pa
WINTER			
Air temperature before/after	-8.0/14.1	22.0/2.4	°C
Air relative humidity before/after	90/18	40/97	%
Condensate		0.6	l/min
Capacity	114.69		kW
Temperature efficiency	73.7		%
Dry efficiency according to EN 308 at 15500 m³/h	72.3		%
Energy class for heatrecovery (EN13053)		H2	
SUMMER			
Air temperature before/after	35.0/27.4	24.0/32.5	°C
Air relative humidity before/after	36/56	50/30	%
Condensate	0.0		l/min
Capacity	39.30		kW
Temperature efficiency		77.3	%
Heat exchanger model	BK AL 12 N 775 N 1 AF SC X2		
Heat exchanger type	Aluminum heat exchanger		
Temperature efficiency	High efficiency		
Drip tray	Stainless steel		
Diameter of pipe from drip tray	2 x 40		
			mm

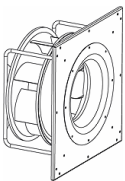
Condensate and low temperature! Consider your needs for defrosting.

Empty section



Pressure drop	7	Pa
Length	300	mm

Fan, Plug

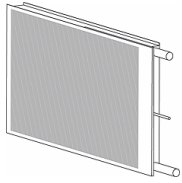


Air flow	15500	m³/h
External pressure	400	Pa
Pressure drop	38	Pa
Static pressure (Designed at wet conditions)	1307	Pa
Total pressure	1338	Pa
Fan speed	2433	RPM
Maximum fan speed	2620	RPM
Total efficiency by static pressure, incl. motor and speed control	68.9	%
Total efficiency by total pressure, incl. motor and speed control	70.6	%
K-factor (p=1.2 kg/m³)	(2 x 220) 440	
Fan type - 2xLarge - Impeller ZAmid	GR45I-ZID.GG.CR	
ErP efficiency n(stat,A)	73.4	%
ErP efficiency class N(actual)/ N(target)	76.6 / 62	
ErP-conformity	Yes	
Direct drive		

Motor

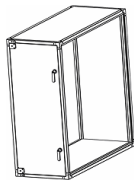
Motor types	EC motor	
Motor types-size	ZID.GG.CR	
Motor protection		
Total power	(2 x 5.00 kW) 10.00	kW
Speed (nominal)	2620	RPM
Total current, Amp.	(2 x 8.00 A) 16.00	A
Voltage	3x400	V
Consumed power from mains power supply, including speed control	8.16	kW
SFPv, clean filters including speed control	1.83	kW/(m³/s)
Winter: Temperature before / after	14.1 / 14.8	°C
Summer: Temperature before / after	27.4 / 28.2	°C
Winter: Humidity before / after	18 / 17	%
Summer: Humidity before / after	56 / 53	%

Heating coil, Fluid



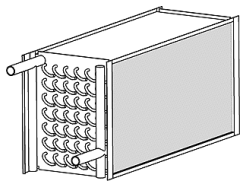
Air flow	15500	m ³ /h
Pressure drop	25	Pa
Air temperature before/after	14.8/22.0	°C
Air relative humidity before/after	17/11	%
Capacity	37.15	kW
Face velocity	3.55	m/s
Fluid type	Water	
Fluid temperature inlet/outlet	70.0/50.0	°C
Fluid flow rate	0.46	l/s
Fluid pressure drop	7.1	kPa
Fluid velocity	0.53	m/s
Coil volume	7.1	l
Connection side	Service side	
Connection size inlet/outlet	1 1/4" / 1 1/4"	
Tube material	Cu	
Fin material	Al	
Fin thickness	0.11	mm
Fin spacing	2.5	mm
No. of rows	1	
Coil code	GXH-18-W-4-1-8-750-1615-2.5-CU-AL11-H-1 1/4	
Tap for frost guard	1	pcs
Valve for heating	3-port valve, Kvs 4.00, DN20 Inside thread	
Calculated pressure drop valve	17	kPa

Inspection section



Pressure drop	7	Pa
Length	300	mm

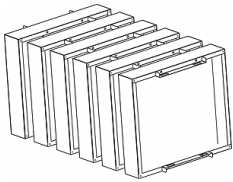
Cooling coil



Air flow	15500	m ³ /h
Pressure drop air, wet coil with condensate droplets	193	Pa
Pressure drop air, dry coil	132	Pa
Air temperature before/after	28.2/16.0	°C
Air relative humidity before/after	53/92	%
Total cooling capacity	95.93	kW
Sensible cooling in % of total cooling	66	%
Face velocity	3.74	m/s
Condensate	0.8	l/min
Fluid type	Water	
Fluid temperature inlet/outlet	7.0/12.0	°C
Fluid flow rate	4.60	l/s
Fluid pressure drop	29.3	kPa
Fluid velocity	1.29	m/s
Coil volume	44.9	l
Connection side	Service side	

Connection size inlet/outlet	2 1/2" / 2 1/2"	
Tube material	Cu	
Fin material	Al	
Fin thickness	0.11	mm
Fin spacing	4.0	mm
No. of rows	8	
Drip tray material	Stainless steel	
Diameter of pipe from drip tray	40	mm
Coil code	GXK-18-W-4-8-33-750-1533-4.0-CU-AL11-H-2 1/2	
Droplet eliminator	73	Pa
Valve for cooling	3-port valve, Kvs 25.00, DN50 Inside thread	
Calculated pressure drop valve	44	kPa

Sound attenuator

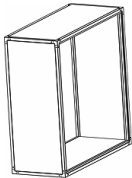


Pressure drop	42	Pa
Length	900	mm
Cleaning of the material	Standard	
Attenuator size (and gap)	150-75	mm

Frequency band [Hz]	63 [dB]	125 [dB]	250 [dB]	500 [dB]	1K [dB]	2K [dB]	4K [dB]	8K [dB]
Sound attenuation	4	7	14	24	38	37	26	19

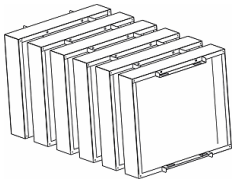
The extract unit consist of

Empty section



Pressure drop	6	Pa
Length	200	mm

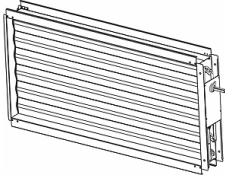
Sound attenuator



Pressure drop	33	Pa
Length	900	mm
Cleaning of the material	Standard	
Attenuator size (and gap)	150-75	mm

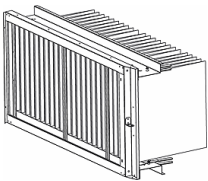
Frequency band [Hz]	63 [dB]	125 [dB]	250 [dB]	500 [dB]	1K [dB]	2K [dB]	4K [dB]	8K [dB]
Sound attenuation	4	7	14	24	38	37	26	19

Damper



Pressure drop	4	Pa
Damper blades	Standard	
Number of dampers	1	pcs
Number of shafts	1	
Damper actuator - Spring return	1	pcs
Damper actuator - Voltages	24	V
Damper actuator - Torque	10	Nm

Filter

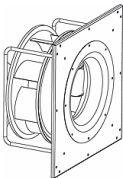


Dimensioning pressure drop	105	Pa
Initial pressure drop/Final pressure drop	55/155	Pa
Velocity, face area	2.92	m/s
Velocity, filter area	0.17	m/s
Filter class	M5 - ePM10 60%	
Filter size	2x[490x392x25] + 4x[592x392x25]	
Filter length	520	mm
Filter description	Camfil Hi-Flo II XLT	

Plate heat exchanger

Data are stated on supply.

Fan, Plug



Air flow	13800	m³/h
External pressure	400	Pa
Pressure drop	30	Pa
Static pressure (Designed at wet conditions)	879	Pa
Total pressure	904	Pa
Fan speed	2040	RPM
Maximum fan speed	2300	RPM
Total efficiency by static pressure, incl. motor and speed control	69.3	%
Total efficiency by total pressure, incl. motor and speed control	71.2	%
K-factor (p=1.2 kg/m³)	(2 x 220) 440	
Fan type - 2xLarge - Impeller ZAMid	GR45I-ZID.GG.CR	
ErP efficiency n(stat,A)	75.0	%
ErP efficiency class N(actual)/ N(target)	80.0 / 62	
ErP-conformity	Yes	
Direct drive		

Motor

Motor types	EC motor	
Motor types-size	ZID.GG.CR	
Motor protection		
Total power	(2 x 3.40 kW) 6.80	kW
Speed (nominal)	2300	RPM
Total current, Amp.	(2 x 5.40 A) 10.80	A
Voltage	3x400	V
Consumed power from mains power supply, including speed control	4.86	kW
SFPv, clean filters including speed control	1.20	kW/(m³/s)

Winter: Temperature before / after	2.4 / 2.9	°C
Summer: Temperature before / after	32.5 / 33.0	°C
Winter: Humidity before / after	97 / 94	%
Summer: Humidity before / after	30 / 29	%

Other parts

Feet or baseframe

Feet or baseframe	Feet	
Height of feet or baseframe	118	mm
Corrosion protection	Surface protection of Magnelis	

Duct connections

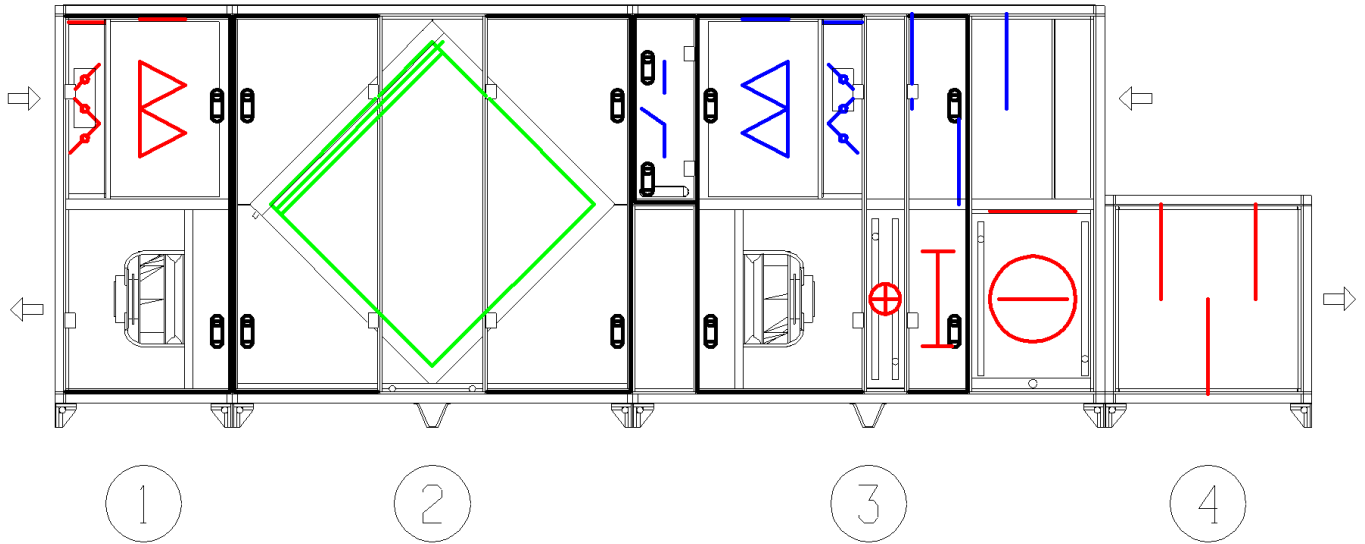
Product	Dimensions (width x height)	
Outdoor	1800x800 mm	
Supply	1800x800 mm	
Extract	1800x800 mm	
Exhaust	1800x800 mm	

Section about shipping

Unit sections	Dimensions (width x height x length), incl. packaging	Weight, Inc. Packaging	Weight of unit
Section 1	1982 x 2000 x 921 mm	333 kg	333 kg
Section 2	1982 x 2000 x 1980 mm	751 kg	749 kg
Section 3	1982 x 2000 x 2321 mm	938 kg	935 kg
Section 4	1982 x 1100 x 1062 mm	230 kg	229 kg

Feet are supplied mounted on the unit casing.

Weights



Section No	Section Code	Function Code	Weight of function kg	Weight of section kg
1	Casing Length 841 mm			325
		Casing	175	
		Damper	29	
		Filter	24	
		Fan	96	
2	Casing Length 1900 mm			739
		Casing	309	
		Plate heat exchanger	431	
3	Casing Length 2241 mm			915
		Casing	452	
		Empty section	0.1	
		Fan	106	
		Heating coil	30	
		Inspection section	0.1	
		Cooling coil	140	
		Empty section	0.1	
		Sound attenuator	106	
		Damper	29	
		Filter	25	
		Control system	27	
4	Casing Length 982 mm			226
		Casing	120	
		Sound attenuator	106	
	Other components			28
	Weight of unit			2234